

VIII.

YELLOW FEVER AS IT EXISTED IN CHATTANOOGA, TENN., ITS ORIGIN, PROGRESS, AND THE PROBABLE REM- EDY FOR ITS ABATEMENT IN THE FUTURE.

READ AT THE ANNUAL MEETING, RICHMOND, VA., NOVEMBER 21, 1878.

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CHATTANOOGA, the county seat of Hamilton County, Tenn., is situated upon the south bank of the Tennessee River, one hundred and ten miles southwest of Knoxville, three hundred and five miles from Memphis, and one hundred and fifty-one miles south from Nashville, being upon the extreme southern boundary of the State, and nearly midway, east and west, from the State lines ; is surrounded by mountains almost upon every side, Lookout Mountain, Waldren's Ridge, Raccoon Mountain, and Minion Ridge encircling the city. It is the centre, so to speak, of a network of railroads, composed of the East Tennessee and Georgia, Western and Atlantic, Nashville and Chattanooga, the Cincinnati Southern, the Alabama Great Southern, and the Memphis and Charleston Railroads, being in daily communication with Nashville, Atlanta, Memphis, Vicksburg, Mobile, and other southern cities ; is seven hundred and forty-five feet above tide-water, almost at the foot of Lookout Mountain and Minion Ridge, while the noble old Tennessee rolls its limpid waters almost around the city, in its course to the Gulf. These railroads bring to us daily hundreds of tons of freight and almost thousands of passengers ; most of the freight breaking bulk at this point previous to its shipment elsewhere.

With this explanation of our city, brief though it may be, you will see at a glance that she is the great distributing point for the States of Alabama, Georgia, a large portion of Mississippi, and other southern States, and brings back through these railroads their staple products, to again have them distributed through the States north of us. This daily communication from all points south has had its full weight and significance with us this summer and fall, as *you* will see and *we* all have felt.

Our city has a population of over 12,000 inhabitants : 7,500 of them being white, while 4,500 are colored, scattered, of course, over the hills and flats of the city.

The Third and Fourth Wards, as you observe, by glancing at this map,¹ so kindly prepared for me by my friend Dr. Milo Long, are the most densely

¹ Not prepared for publication.

populated, and also contain the largest area of ground that is low and swampy, poorly drained, and with a water supply far from perfect, large portions of both having been filled up the past season with new made earth, while a part of the Third Ward was the receptacle of all the filth and garbage from the sutler stores located there during the late war, and especially that portion of it which lies directly west of Chestnut Street, bounded by Ninth Street on the south and Eighth Street on the north ; a small portion of this ward only being upon the hills which divide it.

The Fourth Ward, in a sanitary point of view, is very poorly located, no sewerage, all surface drainage, and that very poor thin soil, the limestone cropping out near the surface, the water supply for both drinking and culinary purposes being derived mostly from shallow wells, in fact, principally *surface water*, percolated through this thin soil ; with but a few of her people using either cistern or hydrant water. Most of the above ward is located in the lowest portion of our city, the ground upon its northern boundary gradually rising to considerable of an elevation, where some of our finest residences have been erected, McCardie Avenue being the northern boundary of said ward. In the lower portion of this ward, partly owing to its location, and the carelessness of the people living therein, most of their "vaults" are not over two feet in depth, many of them still less. Some of them are even on top of the ground, yea, even worse, on the surface of the rock, with no facilities for removal of their contents, presenting evidences of prevailing ignorance or criminal neglect of sanitary laws.

Another part of this ward, bounded by Ninth, Eighth, Market, and Cherry Streets, deserves a passing notice. A row of brick buildings fronting one hundred feet on Market Street, and sixty feet in depth, owned by a company of capitalists, and occupied as stores below and dwellings above, having been built during the last year or two on ground below the level of the street (no cellar), with but little if any drainage, is constantly exposed to dampness of the soil underneath, amounting at times to large collections of water. East of this row of buildings, a distance of about one hundred feet from the same, the lot has been recently filled, some three feet or more, cutting off, of course, all drainage in that quarter ; and, to make matters still worse, the superintendent of construction erected some three or more frame privies upon brick pillars, two feet or more from the ground, with shallow vaults, if any, separated by wooden partitions, so that when his vaults are full he would have such an *excellent* plan to waste their contents on ground adjacent ; and it is a fact worthy of notice that outside of these models of wisdom, a six foot pole could be easily thrust its entire length into the ground, and still no drainage. Another great disturbing element of a good healthy condition of that ward, existed in the filling up of a street, bordering upon this lot before mentioned some three or four feet, with but little, if any, outlet for the surface drainage from the hills above, and *of course* the lots *above* this street have been since that time very damp, and in fact never have been thoroughly dry.

Let me here speak briefly of the Third Ward, the other portion of the infected district, and particularly of a plat of ground, triangular in shape,

bounded by Pine Street on the east, James Street on the south, and a row of buildings fronting on Eighth Street on the north. The base of this triangle is about two hundred feet in length, or a little less, the sides running almost to a point, two hundred and forty feet, or thereabouts, and upon this lot there are some twenty or more tenement houses, or shanties poorly constructed, low ceilings, some neither plastered or ceiled, occupied almost entirely by negroes and poor whites; the entire lot having less than half a dozen privy vaults to supply their wants, and these built almost upon the surface of the ground, never cleaned, while the well from which these people draw their water supply is located in the *centre of the triangle*, with a loamy, thin soil, and of course the same difficulty existing as to drainage as in the ward before mentioned. Another part of this ward lying just south and a little east of this triangle, is lower, more swampy, has nothing but surface drainage, and that very poor; the inhabitants draw their water supply from the well before mentioned, or some wells upon the south side of the block, and in close proximity to the remains of an old livery and sale stable, which had been the centre of all the filth and bad odors in that portion of the city for the past few years and which, fortunately for the health of the place, was burned but a short time since.

The First, Second, and Fifth Wards hardly deserve a passing notice, in a sanitary point of view, being, as they were, comparatively free from the scourge. The first two having easy drainage, greater altitudes, more cleanly in their surroundings, etc., etc., while the Fifth Ward is more sparsely settled, less limestone formation, deeper vaults, better water supply, etc., etc. Pardon me, for thus briefly alluding to the condition of these wards, a description of the same being necessary to a solution of some points connected with the spread of the epidemic in our city.

Here, let me refer you to the mean temperature of our city, daily, for the months of August, September, October, and the first fifteen days of November of this year, so kindly furnished by Dr. Long, who keeps a thrice daily register of the thermometer, rain fall, etc., etc.

Day of Month.	August.	September.	October.	November.
1	81.33	76.66	69.33	38.33
2	82.66	75.66	71.00	44.33
3	76.66	76.66	69.66	49.33
4	78.33	79.66	67.66	48.00
5	79.00	77.33	64.66	51.66
6	80.66	78.33	63.00	56.66
7	81.00	78.00	64.00	66.33
8	82.00	77.33	69.33	55.00
9	82.66	77.66	70.66	50.66
10	84.00	80.00	67.33	49.00
11	80.00	73.33	66.33	59.66
12	75.66	64.33	63.33	50.66
13	75.66	65.33	61.66	50.66
14	77.66	66.00	69.33	50.33
15	80.33	67.33	61.00	-
16	79.00	66.00	60.00	-
17	78.33	69.00	60.33	-
18	81.00	70.33	59.66	-
19	84.66	72.33	59.33	-
20	83.66	72.33	58.66	-
21	79.33	67.33	57.33	-
22	77.66	70.00	58.00	-
23	76.00	64.33	49.66	-
24	80.00	69.66	53.00	-
25	82.00	68.66	54.66	-
26	80.33	72.33	57.66	-
27	82.00	70.00	54.66	-
28	79.33	69.33	44.33	-
29	76.66	71.33	46.33	-
30	74.00	72.33	56.00	-
31	75.00	-	43.33	-

Mean temperature for August = 79.57.

Mean temperature for September = 71.96.

Mean temperature for October = 60.47.

Mean temperature for November = 58.57.

We had local rains on the 11th, 12th, 13th, 14th, 17th, 26th, 27th, 30th, and 31st of August, also on the 4th, 20th, and 23d of September, also on the 6th, 7th, 9th, 10th, 17th, 22d, 17th, and 29th of October. Slight frost appeared upon the night of the 14th of September, while our heavier frosts were during the nights of the 20th, 21st, and 24th of October, frost and ice on the 28th, 30th, and 31st of October, and nearly every night in November up to the present time, November 16.

Our mortality for the last three months is as follows, giving here a list of all the deaths from whatsoever cause : —

DISEASES.	August.	September.	October.	November.	Total.
Typhus Fever	—	—	1	—	1
Typhoid Fever	—	1	1	—	2
Intermittent Fever	1	—	1	—	2
Remittent Fever	—	6	—	—	6
Pernicious Fever	—	6	1	1	8
Congestive Fever	—	—	1	—	1
Yellow Fever	1	32	100	7	140
Inanition	—	—	1	1	2
Intemperance	—	—	1	—	1
Dysentery	—	2	1	1	4
Diarrhœa	1	—	—	—	1
Total from Zymotic Diseases					168
Scrofula	—	1	1	1	3
Consumption	2	2	4	—	8
Tubercular Meningitis	—	—	1	—	1
Convulsions (Infantile)	2	—	3	1	6
Dropsy	—	—	2	1	3
Heart Disease	2	1	3	—	6
Pulmonary Gangrene	1	—	—	—	1
Meningitis	2	—	—	1	3
Pneumonia	—	1	—	—	1
Jaundice	—	1	—	—	1
Scorbutis	—	1	—	—	1
Hepatitis	—	1	—	—	1
Abscess	—	1	—	—	1
Railroad Accident	—	1	—	—	1
Drowned	—	1	—	—	1
Paralysis	—	1	—	—	1
Premature Birth	2	1	—	—	3
Poison (Accidental)	1	—	—	—	1
Unknown	2	4	3	2	11

Total number of deaths from all causes 220

Total number of deaths from zymotic diseases 168

Total number of deaths from yellow fever alone 140

Proportion of yellow fever deaths to deaths *from all causes*, from August 1,
to November 15, 1878 63.63

Yellow Fever Deaths.

White (males)	62
White (females)	45
Colored (males)	21
Colored (females)	12
Over sixteen years (white)	91
Over sixteen years (colored)	26
Under sixteen years (white)	16
Under sixteen years (colored)	7
Total (white)	107
Total (colored)	33
Total deaths (yellow fever)	140

August 14, 1878, Mrs. Jeanette Swartzenburg, a lady from Memphis, fled to this place, and became an inmate of the family of Rev. Jacob Bach, and on the 17th she fell sick, and died the 21st, four days subsequent to her attack, the case being diagnosed by the attending physician the day previous to her death as "yellow fever," and the certificate of death was furnished accordingly to this office. Her body was hastily buried, the clothing and bedding burned in the back yard, the room fumigated and ventilated, and no serious results occurred to the family of Mr. Bach, no one having contracted the disease. Our next case was also a refugee from Memphis, a Mr. William Griffin, who was taken sick on the 3d of September, was diagnosticated on the 6th as having yellow fever, and died on the night of the 6th; was removed at ten P. M. to the cemetery, and remained above ground until twelve M., the 7th, when he was buried. His clothing and bedding were also burned, room ventilated and fumigated, and no one of the family where he was boarding (and it was a large boarding-house in the heart of the city) contracted the disease, nearly every one of the family and boarders hourly visiting him during his illness, nor was any future case traced to this.

September 1 I was called to see the son of one Vincent Burge, an English boy fourteen years of age, who had come home from his work, in a distant part of the town from where he lived, complaining of chilliness, and quite unwell; went to bed, suffering with headache, and soon with high fever. Next day his little brother Arthur, six years of age, was taken sick, and he, too, was sent to his crib. They were very similarly attacked, and at once put under treatment. There was perfect *intermission* in the former, and unmistakable *remission* in the latter; constipated condition of bowels in both, brown fur on tongue of each, neither pointed nor red, no suffusion of eyelids, no yellowness of skin or eyes in either, pulse not over 110; temperature 98° in one, 100° in the other; but little soreness of the limbs or back; no suppression of urine in either; nor was there *any* vomiting of anything but pure bilious matter, — nothing like black vomit. The next day, September 3, the mother was very similarly affected. The same treatment was adopted for her — alteratives, with cathartics, quinine in large doses during the intermission or remission. The first case recovered completely; the youngest boy Arthur died during the night of the 3d, and the mother the morning of the 7th, with no black vomit in any one of the three cases. My diagnosis was malignant remittent fever, or pernicious fever, in the last two patients, and intermittent fever in the first. There were several other cases during that week of precisely a similar nature, one family, where there were five sick at one time, all recovering. These two deaths, following so closely that of Mrs. Swartzenburg and of Mr. Griffin (the two Memphis cases reported as yellow fever), the latter taking place the same night of the death of Mrs. Burge, created considerable excitement, and our local Board of Health was called together the following morning, with an invitation to all the resident physicians to be present and take part in their proceedings. A full history of these three cases, diagnosis, treatment, etc., etc., was given by myself, the attending physi-

cian, and after several queries had been answered by me in regard to the cases, they unanimously coincided with the diagnosis made, made it a matter of record upon the books of the Board, and the same was published in the morning paper of our city as the opinion of not only the Board of Health but of the entire faculty of the city, and the cases are so recorded in the books of the Registrar of Vital Statistics, never having been changed to this day.

The house in which this Burge family lived is located upon the extreme south end of the square which lies south of the block where the first "refugee" from Memphis died, and just across the street from the lot and brick buildings before mentioned, and fifty feet from the east line of said lot, five hundred and thirty feet from the home where Mrs. Swartzenburg took the fever, and died, and about the same distance east from the house where the second case died. Several other cases living contiguous to this lot, and at the same time almost (within forty-eight hours), contracted similar diseases, died, were diagnosed as remittent yellow fever of a malignant nature, and the same has not been changed to this day, while several others recovered completely, having precisely the same symptoms. This Burge family had no direct or indirect connection with either of the two Memphis cases, did not know either the parties themselves, or the families where they died, never did any washing for either, had no clothing from them, and fortunately the parties are living to-day to corroborate my assertion; Mrs. Burge being a woman of feeble health and unable to do her own washing, much less that for others.

Some days previous to the attack of this family the attending physicians reported to this office a couple of cases of yellow fever out in the suburbs of the city, in the Fifth Ward, the patients being two negro boys, who had both arrived from Memphis about the 20th of August, both of whom recovered, and from whom no one contracted the disease, unless it was a member of the Stanfield family, who fell sick and died some three or four weeks later.

Our first citizen case was that of Mrs. L. H. Corey, who was taken down about the 13th of September and died the 19th of the same month. Mrs. Corey was one of our most respectable and useful citizens, living some four squares from the first "refugee" case, and three or more squares from the second, but immediately in rear of and adjoining the triangular space of ground heretofore mentioned. Both the child and husband of Mrs. Corey were attacked at about the same time, and with similar symptoms, having had no connection whatever, direct or otherwise, holding no communication in the least, with either of the cases above referred to, or the cases of remittent fever whose histories are given on the preceding page. The infant son of Mrs. Corey died on the 15th, the mother on the 19th, the first registered as pernicious fever, but afterwards changed to the same as the mother, viz., yellow fever; and though some of our people nursed this family all the time (never having had yellow fever), the coffin of the child being carried to the church, remaining there several hours and services held there, the physician in charge remaining at the bedsides of the patients, almost constantly for days, yet, not a single case of yellow fever can be traced to the Corey family, no one having contracted the disease from that source.

During the progress of the disease in this family and some two or three days previous to the death of Mrs. C., another meeting of the Board of Health was held, with all the physicians again invited to be present, and with the report of a committee of five before them, who had been appointed to visit all "suspicious" cases. They unanimously decided that there were no cases of yellow fever in the city, unless it was that of Mrs. Corey, and her case was considered doubtful. This also was made a matter of record and published in our morning papers. The next day, however, a "woman of the town" died very suddenly, within a few hours of the visit of the city physician, whose duty it was to visit all paupers when sick. This case, from only one visit, was diagnosed as yellow fever. The patient lived but a short distance from Mrs. Corey and south of the triangular lot before referred to, and at the time of her death, and months previous, had had "other diseases" peculiar to her class. The same night her companion, Frank Recter, a one armed ex-soldier, another pauper like the last, was taken suddenly ill, removed to the City Hospital, diagnosed as bilious fever, and died in twenty-four hours from his first attack, and the certificate of death was signed as for "yellow fever." From this date, September 18, the disease spread rapidly, pretty near all over the Third and Fourth Wards, and especially in the immediate neighborhoods of the triangular lot in the Third Ward, and the lot in the Fourth Ward described previously, reaching its acme upon the 11th of October, when there were reported thirty-one cases, and on the 13th of the same month the greatest number of deaths were recorded, viz., thirteen cases of remittent and pernicious fever were reported daily, and some of our Faculty are now of the opinion that we have had no cases of yellow fever in our city this season, a statement I certainly cannot coincide with, though I am firmly of the belief that about the 15th of September we had had no cases of yellow fever, *per se*, except in the cases of the refugees, above referred to. About this time, however, our numerous cases of remittent fever, which were all over the city, appeared to be complicated with symptoms that but few of our physicians were acquainted with, putting on an entirely different type, and about the 28th of September our "local Board of Health," declared the disease epidemic in the wards above mentioned, and advised their depopulation, which, to a certain extent, was complied with, most of the better class of their citizens leaving, a few remaining, while the negroes and poorer class of whites remained. In these two wards was our greatest mortality and number of cases, — the Third and Fourth Wards losing, out of a total death list of one hundred and forty, more than two thirds of the entire number.

The greatest number of cases of yellow fever occurred among the colored race, while the mortality was the largest among the whites. The exact proportion attacked to the number of people left in the city, could only be conjectured, as no census of our city was taken at the time that the least number was left in it. As to the number of cases on hand, and the deaths occurring, we have the best of evidence, an ordinance of our city requiring every case of infectious or contagious disease, as well as a certificate of death from the attending physician, to be furnished the office of the Regis-

trar, which was strictly carried out, and the whole number of cases of yellow fever, as so reported, up to November 16, 1878, was four hundred and forty-six, and the total number of deaths one hundred and forty, making a fraction over thirty-one per cent. of those attacked who died. A table is herewith appended, showing date of first case of refugee and citizens, first death among both, etc., etc., together with the number attacked and number of deaths each week, which was telegraphed weekly to Dr. J. M. Woodworth, Surgeon-general, U. S. M. H. S., at his special request.

Date of First Attack, Refugee.	Date of First Death, Refugee.	Date of First Case among the Citizens.	Date of First Death among the Citizens.	Week ending.	New Cases.	Deaths.	Total Cases at end of each Week.	Total Deaths at end of each Week.
August 17, 1878.	August 21, 1878.	September 13, 1878.	September 19, 1878.	Aug. 21	1	1	-	1
				Aug. 27	-	-	-	1
				Sept. 27	40	21	41	22
				Oct. 4	47	19	88	41
				Oct. 11	144	22	232	63
				Oct. 18	99	33	331	96
				Oct. 25	74	21	405	117
				Nov. 1	30	12	435	129
				Nov. 8	9	4	444	133
				Nov. 15	2	2	446	135

To this list of deaths may be added five more whose certificates have been handed in since, making a total of one hundred and forty deaths, as reported from yellow fever, during its visitation to our city. These tables are as accurate as can be made out (without taking the assertions of non-professional men). As to the number of cases and deaths, — they are official from the records of the Registrar's office, giving the number each day at four P. M.; the reports of new cases and deaths of yellow fever being furnished daily to the office of the Medical Director, where, for the sake of convenience, I requested all reports to be made, and by that office certified to, to me, the original certificates being on file to verify my statements..

Now, pardon me for making a few statements as to the disease itself, its location, spread, etc., etc., in our city. Our first case of fever (among the citizens) of a malignant nature occurred, as before mentioned, September 1, 1878, and not until the 18th did I consider it as anything more than a malignant remittent fever, or pernicious fever, if you so desire to call it, and the cases mentioned were so considered at the time, and so published as the official action of the "Board of Health." My candid opinion is that this was a disease originating in our midst from a foul and contaminated condition of the city, its lack of sewerage, deficient water supply, foul privies, filthy back yards, in a word, from a shameful neglect of the sanitary precautions necessary to

the health and well being of any city; this fact being well proven from its first inception, the locality where the disease originated, its progress and termination. At this time, however, it assumed a different type: the tongue changed in appearance, pointed, eyes suffused, temperature high, 103° to 107° , variable pulse, and, as the disease progressed, suppressed urine, discoloration of skin and eyes, vomiting of black matter, — coffee grounds in appearance at first, and towards the last small specks of blood, disintegrated, sticking to the vessel, — bleeding at the gums and nose, increased menstrual flow, the countenance wearing a troubled look, frequent sighing, pains in head, back, and limbs all through the course of the disease, great tenderness upon pressure over epigastric region, tracing the same even up to the mouth and fauces. With all or most of these symptoms the prognosis was unfavorable, and especially so with the whites; the negroes, in the greater number of cases, getting well unless medicated too much. From three to seven days told the tale with most of our patients, though during convalescence great care was necessary in nursing and nourishment, the least exertion or indiscretion in taking food bringing on a relapse, which more often proved fatal than otherwise. The treatment was varied, mild cathartics at first; mustard foot bath; steam bath for the body; few tonics, but, when given, in large doses, diaphoretics, turpentine internally and externally; few anodynes, nitre, acet. potassa, free use of teas, orange leaves, uva ursi, boneset, watermelon seeds, etc., etc., in fact anything that would produce relaxation, diaphoresis, and avoid suppression of urine. The bodies of nearly all our cases were buried at once, hardly getting cold. None were allowed to be retained at home but a very short time; the clothing and bedding were burned.

New cases increased upon us so rapidly that our prospects for a speedy wiping out of the scourge were rather poor. Our public works were stopped, and suffering among the working classes was seen by most of us. Negroes refused to work in a few days more, for the magic word "rations" was soon bruited among them; the like was never before seen in our city, except by those who had lived here in days of the "Freedman Bureau." Something must be done, and that, too, speedily, and the idea first advanced by a few, but not then carried out, was suggested, that of carrying *every one infected* at once to the hospitals, at this time but little used.

People from the infected wards were removed, especially the children, to a camp beyond the city limits, and but a few days had passed before everything looked more promising for a speedy crushing out of the scourge.

We had an organization second to none in our State, composed of representative men from each ward, familiar with the locality and every person in their respective wards, who saw that everything was carried out *strictly* as ordered and directed by the local Board of Health, by whose suggestion a medical staff was organized, composed of a medical director and a volunteer corps of physicians, composed (most of them) of our best young physicians who stepped to the front and did valuable service, two of whom laid down their lives in giving succor and life to suffering humanity, — Drs.

Barr and Baird, all honor to their memory. Two others contracted the disease in their heroic efforts to save others, but recovered. Atlanta, our sister city, also stepped forward, sent us three physicians, opened a hospital, equipped it with furniture and nurses, paid all the expenses, and when the fever commenced to abate turned it over to our General Relief Committee. To the whole North are we also indebted, for their unmistakeable charity, their kind sympathies, their substantial aid, and their daily heroic efforts to relieve our suffering and afflicted South.

Disinfectants throughout the city, along her streets, alleys, and back yards, have done with us but little good, though car load after car load of supplies have been used in these infected districts. Carbolic acid, coal tar, turpentine, sulphur, etc., etc., all seemed to have met the same fate, though used freely all over the wards named. Nothing appeared to give us any relief, nothing to stay the insatiate monster, until the strong arm of omnipotence was stretched forth; the welcome frost was spread all over the land, and the work was done, and at the time of writing this (November 16) but few cases are in the city, most of these are convalescing rapidly, and our refugees are returning home and living in the infected districts.

Now where did it come from? What the cause? How increased in malignancy and virulency? Was it complicated and with what? Or is it a disease *sui generis*, or not? Is it born and propagated in our midst, or increased in malignancy by our own filth and want of sanitary precautions during the past winter and summer? All these are grave questions, and we are called upon this day, to answer them for these people who have suffered so intensely during the past few months.

First, its origin. For a solution of this question let New Orleans answer, for no one doubts that being the focus from whence the whole Mississippi Valley became infected, it being carried from there along the course of our great rivers, and our numerous railroads, to every southern port and town, almost, until it was traced even to our own mountain home, bringing death and desolation in its fearful track.

What the cause? We answer candidly we do not know, but we do know, however, that with us it commenced its ravages in the lowest and most filthy of our wards, raging in great malignancy and virulency in the place before mentioned. The more filth, the more yellow fever; the lower the ground, the poorer the drainage and water supply, there you would find this disease the worst; and, with few exceptions, following in its course the track of the cholera of 1873, having but few cases anywhere else than in the Third and Fourth Wards, except with persons who transacted their daily business there, contracted the disease while there, were removed to their homes in other portions of the city, either recovered or died, and from them no other person contracted the disease after their removal.

Was it increased in virulence and malignancy in consequence of local causes? Undoubtedly it was, and the number attacked and who died in the neighborhood of the place referred to (the Third and Fourth Wards) bear me out in my assertions. It was not the yellow fever of old, but nearly

every case was more or less complicated with malarial trouble, being more fatal in the same proportion as their systems were filled with the malarial poison from these infected points, increased in malignancy from our own filth and an absolute want of sanitary precautions during the past twelve months. Complicated? Yes. How could it be otherwise, when we take into consideration the diseases which were raging previous to its arrival here, the utter want of drainage, lack of sufficient water supply, the filth of back yards, and privies uncleaned for years, etc., etc.?

Is it a disease of our own, born and propagated here with us? We answer, No; we believe it to be of foreign origin, reaching us from infected ports in what way you will, by "persons" or "things," yet still a "thing" of importation, its germs carried daily in their system by the refugees, until it reaches a point where the soil, moisture, and heat, together with peculiar and fitting unhealthy condition, in a sanitary view, seems to invite it, to call into play the scattering of these germs, which take root, so to speak, and at once the "destroyer" is at your very door, and you have, not the "yellow fever" of days past, but complicated with malaria, and carrying its death-dealing blows, even to those who are daily administering to the wants of the suffering.

Does fright increase the tendency to attack? We have no doubt of it, but not to such an extent as in the cholera epidemic of days past.

What is the public remedy? I do not mean what medicine shall we give, for too much of this has killed as many as the fever itself; but what can we do to prevent the disease from coming amongst us in our inland towns and our high elevations. We answer, increase the sewerage of our city; build the sewers long and large, make them of some moment, carry their outlets into the streams below our water supply, and far out into our rivers; increase our surface drainage; remove our night soil; enlarge our water supply; fill up our wells (for in cities nearly all of them are daily sowing the seeds of disease); use no water except cistern or hydrant. Lay down strict sanitary rules for the government of our city; enforce them. Use water and money freely, to such an extent as to carry out the above views, and my word for it, our city will never more feel the blighting effects of this terrible scourge.

But what of other cities and towns, where such dire havoc has been made the past season, and especially our seaport towns, where the "germs" of this disease are first planted. We answer, establish a strict national quarantine all along our coast. Examine every vessel that comes to our shores (especially from infected ports), and have this work done by those who are competent, not by parties who are subject to the will and caprices of the commercial public, but have them appointed by the government, fitted for their positions by strict and honest competitive examination, and holding them only during good behavior; men who will attend to the duties which devolve upon them, without fear or favor, especially paying no attention to the bribery of those who are more interested in the sale of their cargoes than the health or welfare of the cities where they desire to land. Let

our national Congress enact a law, similar in its nature to the "New York Quarantine Law," appoint competent officers to enforce it from Maine to California, and it will be many a year, if ever, before this scourge will again visit our homes, depopulating whole cities and neighborhoods, laying low in the dust whole families, and making a charnel house of so many of our beautiful southern cities.